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10/763,391	01/26/2004	Muncharu Nakabayashi	62758-068	4589

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600 13th Street, N.W.  
Washington, DC 20005-3096

EXAMINER
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ALL HATTEM

ART UNIT	PAPER NUMBER
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3691

MAIL DATE	DELIVERY MODE
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03/15/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/763,391

**Applicant(s)**

NAKABAYASHI ET AL.

**Examiner**

HATEM ALI

**Art Unit**

3691

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/23/09 & 11/12/09.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 5, 7, 9, 10, 12, 13, 16, 17, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 7, 9, 10, 12, 13, 16, 17, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The following is a **Final Action** on merits in response to a communication received on **11/12/09** and **12/23/2009**.

#### *Acknowledgement*

2. Claim **status**:

- ❖ Claims **cancelled** : **2-4, 6, 8, 11, 14-15** and **18**
- ❖ Claims **amended** : **1-, 5, 7, 9-10** and **16**
- ❖ Claims **pending**: **1, 5, 7, 9-10, 12-13, 16-17** and **19-20**

#### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the **first paragraph** of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims **1, 5, 7, 9-10, 12-13, 16-17** and **19-20** are rejected under 35 U.S.C. 112, **first paragraph**, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically the citations in claims **1, 10, and 16**, "an unidentified sheet ... is/are out of a range of a permissible error" , in claim **1**, "a state of the digital signal being

within a range of an inputted voltage for the A/D converter", and in claims 1, 7, 10 and 16, "a condition of the signal read accuracy by means of changing a range of an inputted voltage ... the denomination of the unidentified bill/sheet" are not found in specification and not clearly described. Therefore, these citations as amended are considered as new matters.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1, 5, 7, 9-10 and 12-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kawakami** (4,769,532) in view of **Zoladz** (5,855,268).

**As per claim 1, Kawakami** discloses a sheet handling apparatus comprising:

a detection part (**Figs.2 & 3** and **col. 4**, lines 22-30; via a **CPU** for controlling a bill [sheet] discrimination device and the like to which **# 1- 5** including light emission controlling circuit) that detects a characteristic of a sheet transported by the transport path;

an amplifier that amplifies a signal obtained from the detection part (**col. 4**, lines 50-57 and **Fig. 2 # 10** [line 53]);

an A/D converter that converts an analog signal amplified in the amplifier to a digital signal (**col.4**, line 52; via an **A/D** converter **11** with amplifier **10** and also in **Fig.2**);

determining means (**CPU** [implied as programmed]) that determine the truth of the sheet, an unidentified sheet that has the characteristic of a true sheet but is out of range of a permissible error, and denomination of the sheet, (true or false [unidentified/undefined]) by use of the signal having been produced as a result of A/D conversion by the A/D converter in reference to predetermined conditions (**col.4**, lines 22-57 and **Figs 2** and **3 # 1**; via a **CPU #1** for controlling a bill discrimination device and [**col. 5**, line 17- reference values; lines 26-27-resultant value  $L_c$  is stored in the **CPU 1** as a **threshold**- implied reference to pre-condition]); and

a control part (**Fig.2**; via **CPU** [inherent & implied as **programmed**]) that changes a condition of signal read accuracy of the detection part according to a result of determining the truth of the sheet in the determining means,

wherein in a state of the digital signal being within a range of an inputted voltage for the A/D converter, if the sheet is determined as unidentified as a result of determining the truth of the sheet in the determining means, the control part changes the condition of the signal read accuracy by means of changing a range of inputted voltage corresponding to the denomination of the unidentified sheet, and transports through the transport path the unidentified sheet determined as unidentified to the detection part again and the detection part detects the unidentified sheet again under the changed condition and the determining means determines again the truth of the unidentified sheet by using the digital signal being obtained according to said changed

condition (CPU- as **programmed** and inherently setting condition it does all operations to determine true or false under changed condition [unidentified/undefined etc. whatever set]).

**Kawakami** did not disclose explicitly a transport path that transports sheet to or from a deposit / withdrawal part,

However, **Zoladz** being in the same field of invention discloses a transport path that transports sheet to or from a deposit/withdrawal part (**Fig.2A** and **col.3**, lines 20-57; via transport system **1** the bill [sheet] entryway **8** leads to a bill passageway **9** [transport path]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the disclosures mentioned by **Kawakami** to include the features as taught by **Zoladz** in order to facilitate the complete process of movement to and from deposit/drawal part, validation and denomination of paper currency [bill or sheet].

**Claims 2-4 (cancelled)**

As per claim 5, **Kawakami** discloses the sheet handling apparatus according to claim **1**, wherein the control part sets conditions to narrow the between an upper limit value and a lower limit value of the A/D converter (**col.6**, lines 50-58; via function of **A/D converter 11**. and **CPU** with control part [implied setting conditions]).

**Claim 6 (cancelled)**

**As per claim 7, *Kawakami*** discloses a method of determining bills for improving capacity of determining of bills in a bill handling apparatus (see **Abstract**; via an automatic cash receiving and dispensing machine), comprising the steps of:

[transporting through a transport path a bill to be deposited to a determining part of the bill handling apparatus to perform determination;]

detecting characteristics of the bill by a detection part of the bill handling apparatus (**Fig.2 # 5**);

processing a digital signal from the detection part (**Fig.5**; via **5, 6, 10, 11, 12, CPU 1**) and determining a denomination and truth of the bill in a determining part of the bill handling apparatus (**col.4, lines 23<sup>+</sup>, Fig.2**; via **CPU** for controlling bill discrimination device);

as a result of the truth determination, classifying the bill into one of at least four types of bills to process the bill, the four types of bills being true bills determined as true, false bills lacking characteristics indispensable to true bills, unidentified bills having characteristics indispensable to true bills but exceeding a permissible error thereof, and undefined bills the denominations of which cannot be determined (**Figs 5-10; col.4, lines 23-65 and CPU**, inherently capable of changing first mode and second mode per intended programs for truth determination);

if the bill is determined as an unidentified bill, changing a condition of the signal read accuracy by means of changing a range of an inputted voltage for an A/D converter responsive to the detection art corresponding to the denomination of the unidentified bill; and after the change, transporting the unidentified bill through the

transport path to the determining part again and detecting characteristics of the unidentified again under the changed condition (**Figs 5-10 & col.4**, lines 23-65 and CPU, with inherent means capability to perform as programmed).

**Kawakami** did not disclose explicitly the step of transporting through a transport path a bill to be deposited to a determining part of the bill handling apparatus to perform determination,

However, **Zoladz** being in the same field of invention discloses transporting through a transport path a bill to be deposited to a determining part of the bill handling apparatus to perform determination (**Fig.2A and col.3**, lines 20-57; via transport system 1 the bill [sheet] entryway 8 leads to a bill passageway 9 [transport path] to the validator [see **Fig.3**]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the disclosures mentioned by **Kawakami** to include the features as taught by **Zoladz** in order to facilitate the complete process of movement, validation and denomination of paper currency [bill or sheet].

**Kawakami** fails explicitly again to disclose the false bills lacking characteristics indispensable to true bills, unidentified bills having characteristics indispensable to true bills but exceeding a permissible error thereof, and undefined bills the denominations of which cannot be determined.

However, **Zoladz** being in the same field of invention discloses the false bills lacking characteristics indispensable to true bills, unidentified bills having characteristics indispensable to true bills but exceeding a permissible error thereof, and undefined bills



the denominations of which cannot be determined (**col.4**, lines 1- 39; via generate the test signals to validate and denominate currency; **Fig.3** and the microcontroller # **32** performs all processing of signals to validate and denominate an inserted banknote)

Therefore, it would be obvious to an ordinary skill in the art at the time of invention was made to modify the disclosure of **Kawakami** to include the features mentioned as taught by **Zoladz** to facilitate in order to use banknote (bill) for validation including denomination with vending or slot machines.

**Claim 8** (cancelled)

**As per claim 9, Kawakami** discloses the method of claim 1, wherein, as a result of the truth determination, the undefined bill is returned through transport path to a user, a bill determined as an unidentified bill and a bill determined as a false bill in another determination are stored in the machine, and a bill determined as an undefined bill in yet another determination is returned through the transport path to the user (**CPU** is capable as programmed and determines the bill, true or false [unidentified / undefined] and transport accordingly).

**As per claim 10, Kawakami**, discloses that a sheet handling apparatus, comprising:

a determining part (**col.4**, lines 22-30; via controlling circuit # **5**) that determines the truth of sheets, unidentified sheets that have the characteristic of a true sheet but out of range of permissible error, and denomination of the sheets transported by the transport path;

a control part (**Fig.2.** with control circuit # 5) that changes accuracy to determine the sheets in the determining part.

**Kawakami** did not disclose explicitly a transport path that transports sheet to or from a deposit/withdrawal part,

However, **Zoladz** being in the same field of invention discloses a transport path that transports sheet to or from a deposit / withdrawal part (**Fig.2A** and **col.3**, lines 20-57; via transport system 1 the bill [sheet] entryway 8 leads to a bill passageway 9 [transport path]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the disclosures mentioned by **Kawakami** to include the features as taught by **Zoladz** in order to facilitate the complete process of movement to and from deposit/drawal part, validation and denomination of paper currency [bill or sheet].

**Kawakami** did not disclose explicitly a stacking part (storage) that temporarily holds sheets determined as unidentified in the determining part, wherein, in a state of digital signal converted from an analog signal by a A/D converter being with a range of an inputted voltage for the A/D converter, if the sheets are determined as unidentified in the determining part, the control part changes the condition of the signal read accuracy by means of changing a range of the inputted voltage corresponding to the denomination of the unidentified sheets, and transports through the transport path the unidentified sheets from the stacking part to the determining part again and a detection part detects the unidentified sheet again under the changed condition and the

determining means determines again the truth of the unidentified sheet by using the digital signal being obtained according to said changed condition

However, **Zoladz** being in the same field of invention discloses that temporary holds sheets determined as unidentified in the determining part, wherein, if the sheets are determined as unidentified in the determining part, the control part changes a determination condition so as to increase the determination accuracy of the determining part, and transports through the transport lath the sheets determined as unidentified from the stacking part to the determining part again to determine the truth of the sheets under a changed condition of the accuracy in the determining part (**Fig.2A**; via transport system 1, passageway 9 [transport path] and **col.3**, lines 10-60; via a currency validator ... to encounter a plurality of optical and other sensors ... to a stacker ... for **storage in a currency cashbox**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the features mentioned by **Kawakami** to include the disclosures as taught by **Zoladz** in order to facilitate through transport system 1 to handle paper (sheet) currency as quickly as possible through validation process.

**Claim 11** (cancelled)

**Claims 12 and 13** are rejected as per reasons set forth in claim 10.

**Claims 14-15** (cancelled)

7. **Claims 16-17 and 19-20** are rejected under 35 U.S.C. 103 (a) as being unpatentable over **Kawakami** (4,769,532) and **Zoladz** (5,855,268) in views of **Negishi** (6,588,570).

**As per claim 16, *Kawakami*** discloses a method of determining bills in a bill handling apparatus, comprising:

a first determination mode in which denominations and truth of the bills are determined with first determination accuracy in the determining part (**Figs.5, 6 and 7; via determination steps**);

setting second determination accuracy as higher bill determination accuracy than the first determination accuracy if a bill is determined as an unidentified bill that has the characteristic of a true sheet but is out of range of a permissible error as a result of determination in the first determination mode by changing the condition of signal read accuracy by means of changing a range of an inputted voltage corresponding to the denomination of the unidentified bill (**Figs.6; via S11 adjusting mode to S21** for completion of mode "Normal" or "Repeat of Process" as second mode or more form reference level; see **col. 7 & 8**);

a second determination mode in which a bill determined as unidentified as a result of the first determination is determined again in the same determining part under the changed condition and determines again the truth of the unidentified bill by using the digital signal being obtained according to said changed condition without being handled by a customer (**Figs.5-10; via CPU** is doing steps as implied and inherently programmed); and

processing bills determined as unidentified or false bills as a result of determination in the second determination mode separately from other bills (**Figs.5-10; via CPU** is doing as programmed).

**Kawakami** did not disclose explicitly the step of transporting bill to be deposited through a transport path to a determining part of the bill handling apparatus to perform determination,

However, **Zoladz** being in the same field of invention discloses the step of transporting bills to be deposited through a transport path to a determining part of the bill handling apparatus to perform determination (**Fig.2A** and **col.3**, lines 20-57; via transport system **1** the bill [sheet] entryway **8** leads to a bill passageway **9** [transport path] to the validator [see **Fig.3**]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the disclosures mentioned by **Kawakami** to include the features as taught by **Zoladz** in order to facilitate the complete process of movement, validation and denomination of paper currency [bill or sheet].

**Kawakami** and **Zoladz** did not disclose explicitly a second determination mode in which a bill determined as unidentified as a result of the first determination is determined again in the same determining part set at the second determination accuracy without being handled by a customer.

However, **Negishi** being in the same field of invention discloses a second determination mode in which a bill determined as unidentified as a result of the first determination is determined again in the same determining part set at the second determination accuracy without being handled by a customer (**col.4**, lines 22+; via the bill validator **1** ... insertion start state [implied first mode of determination] ... if the bill **2**

is normally inserted, the controller **21** ...[**col.5-6**] and **col.7**, line 40; via bill validator **41** ... as bill validating means or bill insertion detecting/validating means ... ).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the features mentioned by **Kawakami** and **Zoladz** to include the disclosure as taught by **Negishi** to facilitate the validation of bills [second mode] in state overlapped/abnormal object/counterfeit/unidentified - not accurately judged to further correctly detection stage by comparator, controller and validation unit to final stage.

**As per claim 17, Kawakami** discloses that the first determination mode includes the steps of:

detecting the characteristics of the bills by a detector; and processing a signal from the detector to determine the truth of the bills (**Figs.5, 6 and 7**; via determination steps);

**Claim 18** (cancelled)

**As per claim 19, Kawakami** discloses the step of storing information about sheets determined as false bills or unidentified bills in the second determination mode in a storing part in association with information capable of identifying users of the bills (see **Figs.5-10**; via CPU inherently doing steps as programmed).

**As per claim 20, Kawakami** discloses further the step of having users confirm an inputted amount if a bill is determined as an unidentified bill as a result of determining the bill in the first determination mode (**Figs.5-10**; via CPU inherently doing as programmed).

***Response to Arguments***

8. Applicant's arguments filed on 11/12/09 have been fully considered but they are **not all** persuasive.

In the remarks, Applicant argues that:

(a) (in remark page 8), "processing a digital signal from the detection part and determining a denomination and truth of the bill in a determination part of the bill handling apparatus" is amended.

(b) **Kawakami** (remark page 10, last para) fails to disclose changing a condition of a signal read accuracy by means of changing a range of the imputed voltage. Rather, Kawakami merely changed an analogue signal to a digital signal based on whether the analogue signal exceeds a predetermined threshold.

(c) (in remarks page 13, para 3) **Negishi** fails to teach or suggest the limitation of claim 16 of changing the condition of a signal read accuracy by means of changing a range of an inputted voltage corresponding to the denomination of the in unidentified bill.

In response to (a):

The Examiner finds the argument persuasive. Therefore, the rejection under 35 U.S.C 101 has been withdrawn.

In response to (b):

The Examiner respectfully disagrees with Applicant's assertion. **Kawakami** refers clearly to a detection part (**Figs.2 & 3** and **col. 4**, lines 22-30; via a **CPU** for controlling a

bill [sheet] discrimination device and the like to which # 1- 5 including light emission controlling circuit that detects a characteristic of a sheet transported by the transport path), a CPU [central processing unit] for controlling a bill discrimination device, where it is implied and inherently understood that a programmed system can control the circuit [say 5] with changing a range of inputted analogue voltage [corresponding to unidentified bill/sheet].

In response to (c):

The Examiner respectfully disagrees with Applicant's assertion. The response to this argument is the same as mentioned above in (b).

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HATEM ALI whose telephone number is (571)270-3021 and Fax (571) 270-4021 [For Cc to Examiner]. The examiner can normally be reached on 8.00 to 6.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ALEXANDER KALINOWSKI can be reached on 571-272-6771. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HATEM ALI  
Examiner  
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